Hill Air Force Base, Utah

Final

Action Memorandum for Time-Critical Removal Actions for Indoor Air

September 2003

FINAL ACTION MEMORANDUM

DATE: **September 14, 2003**

SUBJECT: **Request for Time-Critical Residential Indoor Air Removal Actions at Hill Air Force Base, Utah**

FROM: **Mark Loucks, Hill AFB OU 5 and OU 12 Project Manager**

TO: **Ms. Sandra Bourgeois, US EPA Region VIII**

Mr. Muhammad Slam, Utah Department of Environmental Quality

Site ID #: UT0571724350

PURPOSE

The purpose of this Action Memorandum is to request and document approval of time-critical removal actions at Hill Air Force Base (AFB), Utah. The time-critical removal actions involve the Basewide installation of indoor air mitigation systems in residences overlying volatile organic compound (VOC) plumes originating from Hill AFB. Due to direct impacts to off-Base residences, Hill AFB considers the installation of these indoor air mitigation systems to be "Time Critical" under the *Superfund Removal Procedures Action Memorandum Guidance* (EPA/540/P-90/004, 1990).

12-Month Exemption. It is anticipated at the outset of this investigation that implementation of the time-critical removal actions detailed in this Action Memorandum will exceed the 12-month statutory limitation under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).

SITE CONDITIONS AND BACKGROUND

Site Description

Removal site evaluation. This Action Memorandum was prepared to address the time-critical removal actions that Hill AFB has installed as indoor air mitigation systems in residences identified, or that will be identified in future indoor air sampling programs, as having elevated concentrations of VOCs in indoor air. VOCs (primarily trichloroethene [TCE]) have been detected in groundwater contaminant plumes that are being investigated under the Hill AFB Installation Restoration Program (IRP). Sources of VOC contamination in groundwater around Hill AFB include historical explosives manufacturing and distribution, aircraft maintenance, and other industrial operations.

The Basewide indoor air sampling program and installation of indoor air mitigation systems will be modeled after the Operable Unit (OU) 12 sampling program. Indoor air mitigation systems have been installed at off-Base residences overlying the OU 12 VOC plume at Hill AFB since late 2002. These systems were installed under a time-critical action to reduce or eliminate VOCs in indoor air caused by vapor migration from contaminated shallow groundwater at OU 12. The long-term applicability of these indoor air mitigation systems will be considered in the Feasibility Study (FS) and Record of Decision (ROD) for OU 12. Based on lessons learned from the OU 12 indoor air sampling program, Hill AFB developed the *Draft Final – Revision 1 Basewide Air Sampling and Analysis Plan Indoor Residential Air Sampling* (MWH, 2003).

Physical Location. Hill AFB is located in northern Utah, approximately 25 miles north of Salt Lake City and 5 miles south of Ogden, as shown in Figure 1. The Base occupies approximately 6,700 acres in Davis and Weber counties. The Base is bounded on the north by the Davis-Weber Canal, a privately owned irrigation canal, and on the east by private property. Interstate 15 and State Route 193 form the western and southern boundaries of the Base, respectively.

Site Characteristics. The cities adjacent to Hill AFB are (listed clockwise starting at the north) Roy, Riverdale, South Weber, Layton, Clearfield, Sunset, and Clinton (see Figure 1). Land use within the cities surrounding Hill AFB is primarily residential, light industrial, commercial, and agricultural.

Local Geology. The plateau-like bench, or terrace, on which Hill AFB is located is a remnant of the Weber River Delta that formed as the river entered ancient Lake Bonneville and Pre-Bonneville lakes. Fluctuations of the lake level, variations in the entry point of the Weber River into ancient Lake Bonneville, and the depositional environments of these formations combined to produce a complex stratigraphy beneath Hill AFB characterized by interlayering of lenticular, laterally discontinuous gravel, sand, and clay beds.

Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant, or Contaminant. VOCs are the primary contaminants in groundwater at Hill AFB, the most prevalent of which is TCE. Other VOCs detected above their Maximum Contaminant Levels (MCLs) at Hill AFB include carbon tetrachloride, chloroform, 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethane (1,2-DCA), 1,1-dichloroethene (1,1-DCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), tetrachloroethene (PCE), 1,1,1-trichloroethane (1,1,1-TCA), and vinyl chloride.

Basewide areas of groundwater contamination at Hill AFB are depicted on Figure 2. The OU 2, 4, 5, 6, 8, 9, 10, and 12 plumes are defined by TCE contamination detected above the MCL of 5 μg/l. The OU 1 plume is defined by cis-1,2-DCE contamination detected above the MCL of 70 μg/l, while the on-Base OU 11 plume is defined by MTBE detected above the MCL of 5 μg/l. Also depicted on Figure 2 is the approximate depth to groundwater at Hill AFB and the surrounding areas.

Potential indoor air contamination in residences overlying Hill AFB VOC plumes is a result of VOCs migrating from groundwater to indoor air. The principal route of contaminant migration in groundwater from on-Base source areas to off-Base areas is by flow through the shallow groundwater system. In general, contaminants migrate both vertically and horizontally within the groundwater. However, low-permeability stratigraphic units beneath Hill AFB impede vertical contaminant migration to the deeper confined aquifers used for the drinking water supply.

NPL Status. Since the 1970s, Hill AFB has made compliance with applicable environmental regulations a priority in its Base operations. Since 1984, the United States Air Force has committed significant resources to assess and remediate the environmental contamination identified at Hill AFB. CERCLA established a national program for responding to releases of hazardous substances into the environment. In anticipation of CERCLA, the Department of Defense (DoD) developed the IRP to respond to releases of toxic or hazardous substances at DoD facilities. Hill AFB was already engaged in the IRP when placed on the United States Environmental Protection Agency's (EPA) National Priorities List (NPL) in July of 1987. Twelve operable units have been established at Hill AFB since that time (Figure 2). Hill AFB has been assigned the Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS) identification number UT0571724350. Hill AFB entered into a Federal Facilities Agreement (FFA) in 1991 with EPA and the State of Utah. All restoration activities at Hill AFB follow CERCLA guidelines and are monitored by EPA and the Utah Department of Environmental Quality (UDEQ).

Other Actions to Date

Previous Actions. Through August 2003, indoor air mitigation systems have been installed at nine residences overlying the OU 12 VOC plume. These systems were implemented to reduce indoor air concentrations of TCE and mitigate indoor air quality issues associated with groundwater contamination at OU 12. No indoor air mitigation systems have yet been installed at other operable units at Hill AFB.

Status of Time-Critical Actions. All nine indoor air mitigation systems installed at OU 12 are currently in operation. One future indoor air mitigation system is currently scheduled for installation. Performance monitoring of installed mitigation systems is being conducted quarterly for the first year, semi-annually for the second year, annually for two additional years, and then on a five-year review cycle, on the condition that sample results remain below Mitigation Action Levels (MALs) established in the *Draft Final – Revision 1 Basewide Air Sampling and Analysis Plan Indoor Residential Air Sampling* (MWH, 2003).

Federal, State, and Local Authorities' Roles

Federal, State, and Local Actions to Date. EPA and UDEQ have been notified that Hill AFB will be installing indoor air mitigation systems at off-Base residential locations. EPA and UDEQ

have reviewed the *Draft Final – Revision 1 Basewide Air Sampling and Analysis Plan Indoor Residential Air Sampling* (MWH, 2003). EPA and UDEQ recommended that Hill AFB collect background air samples from homes not overlying the dissolved VOC plume to establish site-specific baseline TCE concentrations for indoor air. However, both agencies approved the MALs, which are used to determine when a mitigation system should be installed in a residence.

City and public meetings are held periodically to discuss the investigation and remediation process with the residents and leaders of the cities adjacent to Hill AFB. These include information fairs (InfoFairs), city council meetings, and city planning commission meetings. Restoration Advisory Board (RAB) meetings also are held quarterly at Hill AFB. The RAB meetings are used to update the communities, local health departments, and regulatory agencies on project progress, communicate important information, and educate community leaders on specific issues, and seek direction and prioritize project activities relative to the needs of all operable units at Hill AFB.

Potential for Continued Federal, State, and Local Response. Hill AFB will continue to inform UDEQ and EPA concerning the status of residential air sampling and mitigative actions. The community will continue to be updated on residential air sampling and mitigation through RAB meetings and local city InfoFairs.

THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Threats to Public Health or Welfare

Contaminant concentrations in the indoor air of some residences exceed MALs, which are derived from generic screening levels from the *U.S. EPA Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soil* (U.S. EPA, 2002) or from background concentrations. The owners or occupants of residences where indoor air concentrations exceed the MALs will have the option to have an indoor air mitigation system installed in their homes.

Threats to the Environment

There are no known threats to the environment from air exposure pathways that are not being addressed under individual operable unit investigations.

ENDANGERMENT DETERMINATION

If indoor air concentrations exceeding their respective MALs are not addressed by implementing the response action selected in this Action Memorandum, there could be a direct endangerment to health at the residential location where the contamination is present.

EXEMPTION FROM SATUTORY LIMITS

Consistency Exemption. The residential indoor air investigation is currently under way in OU 12 and is intended to be expanded to other Hill AFB operable units. Continued installation of indoor air mitigation systems at other off-Base residential locations is appropriate and must be consistent with installation of systems already in place at OU 12. These mitigation systems will not interfere with existing or potential future remedial alternatives to address groundwater contamination that may be considered in the FS or ROD or any remedies implemented under existing RODs.

PROPOSED ACTIONS/ESTIMATED COSTS

Proposed Actions

Proposed Action Description. The primary performance objective for indoor air mitigation systems at Hill AFB is to reduce the concentration of VOCs in indoor air to below the MALs. Hill AFB will offer homeowners with VOC detections above the MALs an indoor air mitigation system based on active soil depressurization systems used for indoor radon gas mitigation, in combination with furnace venting for some locations. Industry expert Doug Kladder (personal communication, August 15, 2002) states that such active soil depressurization systems work to mitigate VOCs in indoor air originating from VOCs in soil gases and groundwater beneath a subject building. Sampling results to date for the existing mitigation systems installed confirm the effectiveness of the systems at reducing indoor air VOC concentrations.

The systems are to be designed and installed in a manner that meets the following objectives (Kladder, 2002):

- Creates a negative pressure in the soil or geology underlying the structure's foundation
- Operates continuously
- Does not interfere with the use of any of the building's appurtenances or use patterns
- Does not negatively impact the aesthetics of the structure
- System location does not create noise pollution within the structure or toward adjacent structures
- Is designed and installed as an integral and durable part of the operating systems of the structure

- Has the ability to indicate a potential mechanical failure to the occupant of the structure

- Has an On-Off switch/dedicated breaker so the exhaust fan may be shut off in the event of system malfunction

- Does not create additional hazards within the structure such as back drafting of combustion appliances or disturbance of asbestos-containing building materials

The design of individual active soil depressurization systems depends on the configuration of the building, as described below:

Basement Systems: For buildings with full or partial basements, a homeowner and installation contractor may choose either an exterior- or interior-routed, active (exhaust fan operating), sub-slab depressurization system. An exterior-routed system routes the vent piping directly from a suction point cut into the basement floor slab to the outside of the building by the most direct route, as shown in Figure 3. At least 1.3 cubic feet of material from beneath the slab will be removed to facilitate proper soil gas movement to the suction point. An exhaust fan is mounted outside the building, and exhaust piping is routed to an appropriate location at or above the roofline on the outside of the building. An interior-routed system routes vent pipe from a similar suction point cut in the basement floor slab up and through the structure and out the roof (Figure 4). The exhaust fan is mounted in an attic or other area that is not a living space, or below one, and exhaust piping is routed through the roof at an appropriate location.

Use of Existing or New Water Drainage Systems: In the case where a basement is equipped with an existing sump, it may be possible to use this sump as the suction point of a soil depressurization system. A submersible pump, a properly sealed lid to allow for future maintenance, and a certainty that provisions have been made to prevent indoor air from being drawn into the vent system are the main requirements of this type of system. If groundwater is encountered or anticipated during the installation of a sub-slab depressurization system, sump installation may be ideal to solve both groundwater and soil gas problems. Refer to the U.S. EPA Radon Mitigation Standards for specifications (U.S. EPA, 1994).

Crawl Spaces and Combination Systems: For buildings with a crawl space, an active sub-membrane soil depressurization system may be appropriate (Figure 5). For this system, crawl space penetrations and the entire floor of the crawl space are completely sealed using 4-mil thick, cross-laminated polyethylene sheeting attached at all points of the foundation walls. A single length of three-inch diameter, corrugated, perforated pipe will run the length of the crawl space, laid beneath the membrane and directly on the soil of the crawl space floor. The perforated pipe will in turn be connected to the discharge piping system and soil gas will be pulled from beneath the sealed membrane with an exhaust fan to the exterior of the building. The exhaust fan and vent are set up much like the sub-slab depressurization

system described previously. Buildings having a combination of basement and crawl space, or basement divided by footer walls or multi-level slabs, may receive both a sub-slab and a sub-membrane system, or a multiple suction point sub-slab system, respectively (Figure 4).

For buildings with existing sump systems or basements at or near the water table that might experience flooding if the slab were penetrated, an active sub-slab depressurization system that utilizes a sump system as a suction point may be installed. Ultimately the decision as to which system will be installed will be left to the installation contractor and the homeowner.

Furnace Venting: Venting residential furnaces to the outside effectively reduces negative air pressure in the home created by furnace combustion. This is accomplished by drawing combustion air from outside the home rather than from inside the home. By reducing the negative air pressure inside the home, there is reduced opportunity for soil gas from beneath the building to be drawn through cracks and other entry points into the building's atmosphere. Hill AFB may retrofit buildings that do not currently have furnaces vented to the outside, if after all possible adjustments have been made by the mitigation subcontractor, there are still detections of constituents of concern above MALs and it is additionally requested by the homeowner.

Some modifications may be required on a site-by-site basis to optimize the performance of the generalized systems described above.

Contribution to Remedial Performance. Implementation of mitigation measures will reduce residential exposure to VOCs in indoor air. Performance of indoor air mitigation systems will be evaluated through performance sampling. Initial Performance Sampling will be scheduled for approximately three weeks from the system installation completion date, as discussed in the *Draft Final – Revision 1 Basewide Air Sampling and Analysis Plan Indoor Residential Air Sampling* (MWH, 2003). If the system appears to be functioning properly based on Initial Performance Sampling analysis results, the system will be turned over to the resident. The homeowner will additionally agree to quarterly performance sampling for at least one year, semi-annual sampling for at least another year, annual sampling for at least two additional years, and five-year review-cycle sampling from the date of system installation. In this way, Hill AFB will continue to collect data on the system performance, as discussed in the *Draft Final – Revision 1 Basewide Air Sampling and Analysis Plan Indoor Residential Air Sampling* (MWH, 2003).

If it is determined through performance sampling that the system is not functioning properly (i.e., not removing all VOCs from indoor air), the mitigation contractor will return to make adjustments or corrections/upgrades to the system, including providing another suction point or additional mitigative measures if necessary. If modifications are required due to exceedances of the MAL, then quarterly performance sampling will be conducted for a minimum of four additional quarters from the modification date. This sampling will begin approximately three weeks following modifications to the system.

EE/CA. An EE/CA was not performed for the proposed action due to the time-critical nature of mitigating indoor air contamination in private residences. However, the *Draft Final – Revision 1 Basewide Air Sampling and Analysis Plan Indoor Residential Air Sampling* (MWH, 2003) will be used as guidance for conducting indoor air sampling and for installation of mitigation systems at all operable units at Hill AFB.

Applicable or Relevant and Appropriate Requirements. The indoor air mitigation systems will comply with all applicable or relevant and appropriate requirements pertaining to the system and the air exposure pathway being addressed by the system. A detailed discussion of compliance with state and federal regulations is presented in Appendix B.

Project Schedule. From November 2003 through March 2004 Hill AFB plans to sample indoor air at approximately 500 off-Base residences overlying the VOC plumes at Hill AFB. Repeat sampling is anticipated at the same locations the following year from November 2004 through March 2005. Mitigation systems will be installed on an "as needed basis," to be determined based on the results of indoor residential air sampling.

Estimated Costs

Five-year costs for individual interim mitigation systems are estimated to be $8,500 ± 30 percent. This cost estimate factors in the installation cost for the actual system, performance sampling, reporting cost, management and scheduling, system maintenance, and yearly operations costs that are reimbursed to the homeowner.

EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

The expected change in the situation should the actions outlined in this Action Memorandum be delayed or not taken is limited to the continued contamination of indoor air in some buildings overlying the dissolved contaminant plume.

OUTSTANDING POLICY ISSUES

There are no outstanding policy issues associated with these actions.

ENFORCEMENT

Hill AFB and the DoD are the only responsible parties involved. Hill AFB is actively engaged in the DoD's IRP and has demonstrated a willingness to properly and promptly respond to environmental issues identified at the Base.

RECOMMENDATION

This decision document represents the selected action for the operable units in the Hill AFB IRP, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. This decision is based on the administrative record for Basewide locations. The conditions of the selected action meet the criteria of the CERCLA section 104(c) consistency exemption from the 12-month limitation, and we recommend your approval of the proposed removal action and 12-month exemption.

PROJECT AUTHORIZATION

Action Memorandum for Time-Critical Removal Actions for Indoor Air

Hill Air Force Base, Utah

2003

APPROVALS

Hill Air Force Base	Date

REFERENCES

Kladder, Doug. Personal communication with Shirley Steinmacher on July 15, 16, and 19, 2002.

Kladder, Doug, 2002. Specifications for Soil Gas Reduction Systems. July 19, 2002.

MWH, 2003. Draft Final – Revision 1 Basewide Air Sampling and Analysis Plan Indoor Residential Air Sampling, September 2003.

U.S. EPA, 1990. Superfund Removal Procedures Action Memorandum Guidance (EPA/540/P-90/004, 1990).

U.S. EPA, 1994. EPA Radon Mitigation Standards, (EPA 402-R-93-078, Rev. April 1994).

U.S. EPA, 2002. Region 9 Preliminary Remediation Goals (PRGs) 2002.

ROY CITY

RIVERDALE

Roy Gate

WEBER COUNTY

DAVIS COUNTY

North Gate

Hill Air Force Base Boundary

CLINTON

SUNSET

SOUTH WEBER

HILL AIR FORCE BASE

West Gate

Southwest Gate

Golf Course

South Gate

CLEARFIELD

LAYTON

0 1000 2000 3000

Scale in Feet

HILL AIR FORCE BASE

SITE AND VICINITY MAP

FIGURE 1

FILE I:\hill_afb\dgn\basewideeimemo403\1_vicinbw403.dgn PLOT DATE/TIME 09/02/2003 06:33:16 PM

FILE I:\hill_afb\dgn\basewideairmemo403\2_OUdtw403.dgn PLOT DATE/TIME 09/10/2003 06:55:49 PM

ROY CITY
RIVERDALE
WASHINGTON TERRACE
WEBER COUNTY
DAVIS COUNTY
CLINTON
SUNSET
CLEARFIELD
SOUTH WEBER
LAYTON

OPERABLE UNIT 6
OPERABLE UNIT 12
OPERABLE UNIT 4
OPERABLE UNIT 5
OPERABLE UNIT 9
OPERABLE UNIT 10
OPERABLE UNIT 9
OPERABLE UNIT 7
OPERABLE UNIT 9
OPERABLE UNIT 11 (Bldg. 454)
OPERABLE UNIT 9
OPERABLE UNIT 3
OPERABLE UNIT 9
OPERABLE UNIT 9
OPERABLE UNIT 2
OPERABLE UNIT 1
OPERABLE UNIT 8
SITE 870 ST061
ST068
Hill Air Force Base Boundary

0 1000 2000 3000 4000
Scale in Feet

EXPLANATION

OU 1 shows cis–1,2–DCE isoconcentration contour lines

- 70–1000
- >1,000

OU 8

- 1,2–DCA plume

OU 2, 4, 5, 6, 8, 9, 10, and 12 show TCE isoconcentration contour lines

- 5–10
- 10–100
- 100–1,000
- 1,000–10,000
- >10,000

OU 11 – Bldg. 454 shows MTBE isoconcentration contour lines

- 5–10
- 10–100
- 100–1,000
- 1,000–10,000

ST061 and ST068 show petroleum hydrocarbon isoconcentration contour lines

- Extent of ground–water contamination
- Extent of LNAPL

DEPTH TO GROUNDWATER

- 0′ – 10′
- 10′ – 20′
- 20′ – 25′
- >25′

Depth to groundwater contours are based on shallow well data and are considered estimates

TCE	Trichloroethene
cis–1,2–DCE	cis–1,2–Dichloroethene
1,2–DCA	1,2–Dichloroethane
MTBE	Methyl tertiary butyl ether
LNAPL	Light Non–Aqueous Phase Liquids

Areas of highest potential concern for indoor air quality

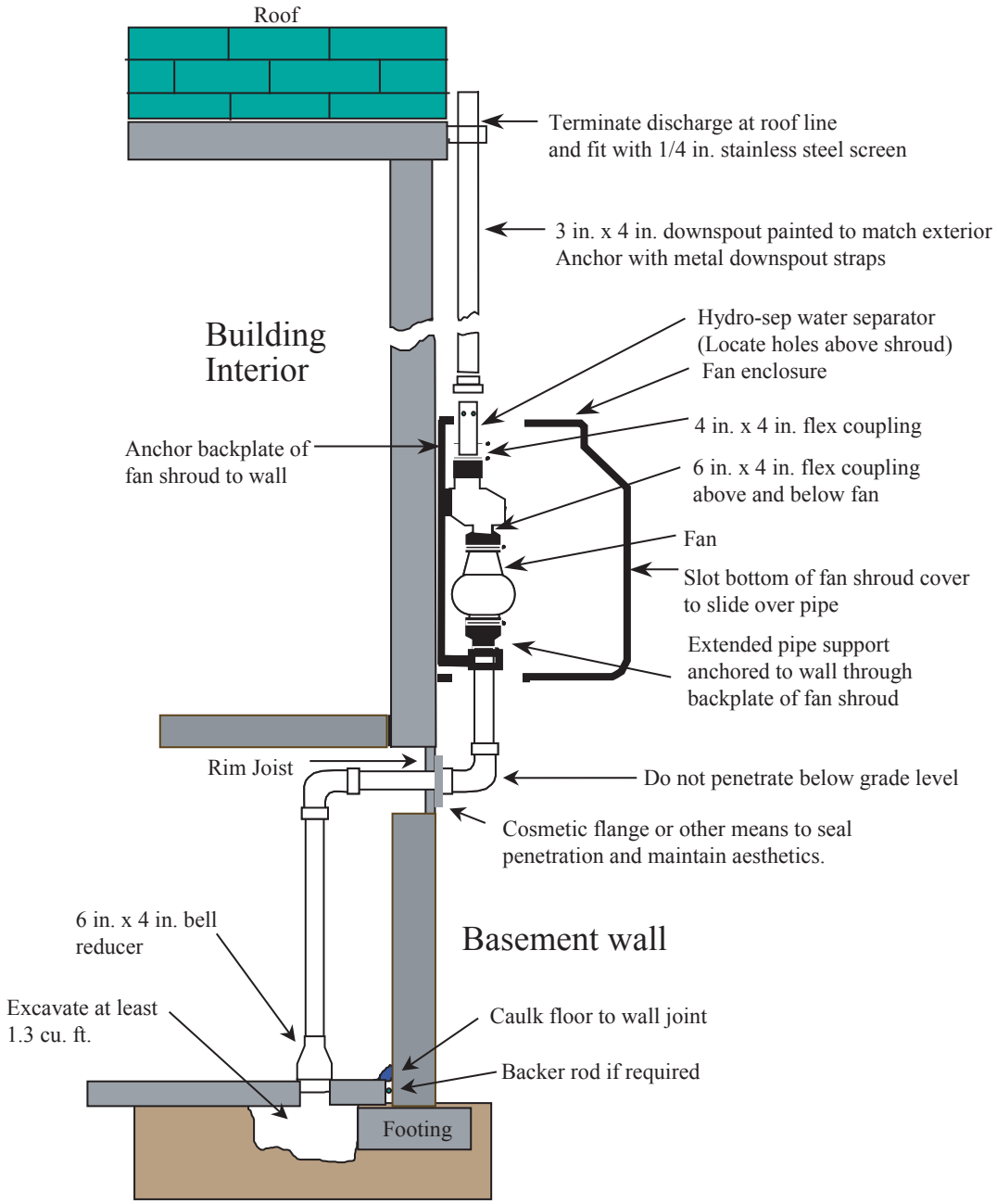
Colored areas show groundwater contamination above Primary MCLs (Maximum Contaminant Levels). Concentrations are in micrograms/liter (ug/l)

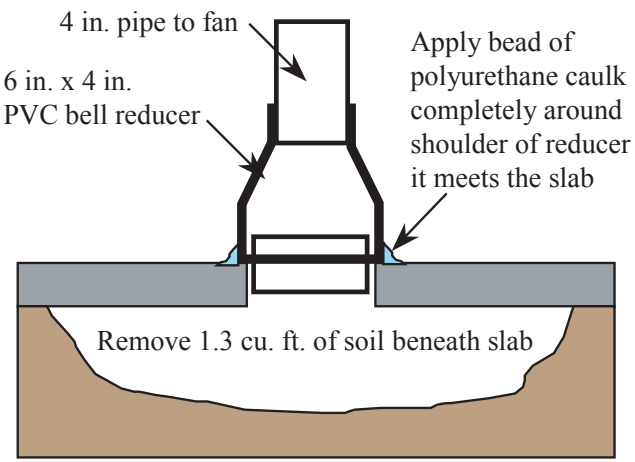
HILL AIR FORCE BASE

AREAS OF GROUNDWATER CONTAMINATION AND DEPTH TO GROUNDWATER

FIGURE 2

FILE *fig 3 ext routed 802.ai 10/10/02*





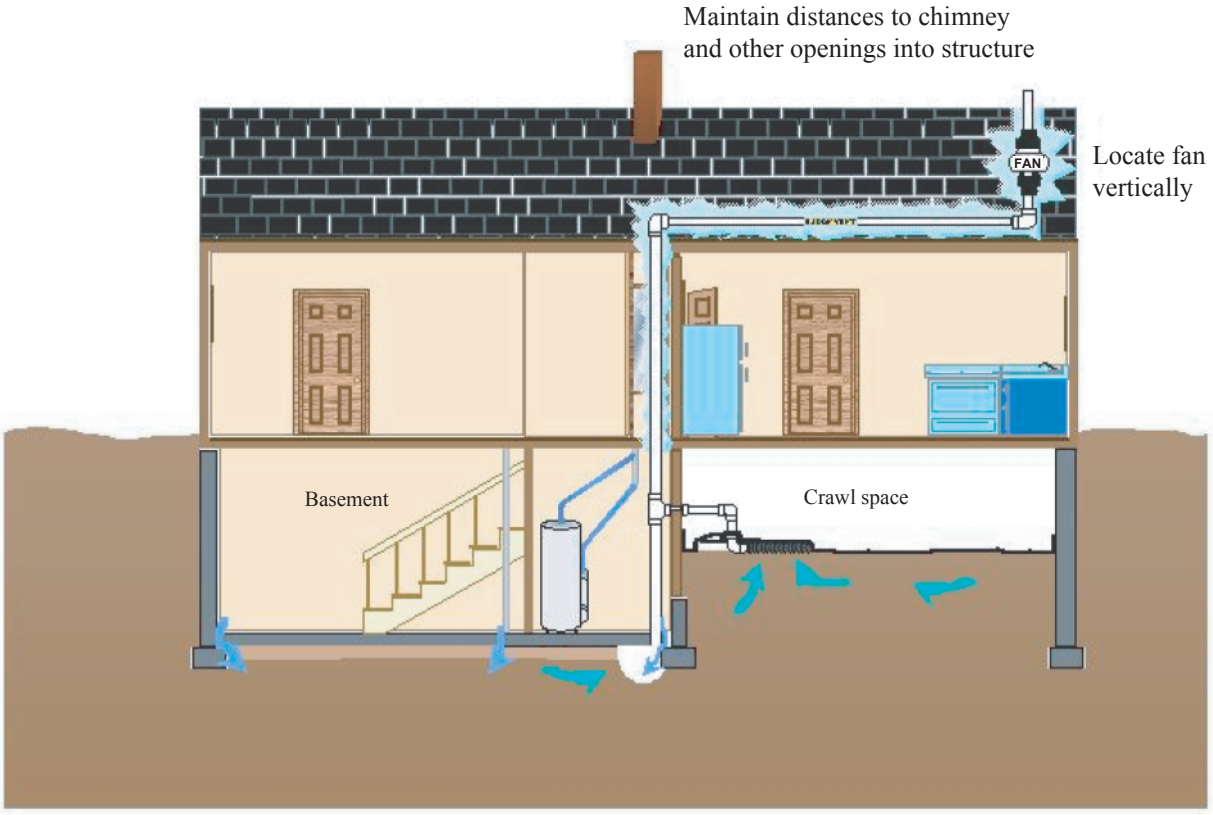
Suction Point Detail

SOURCE:
Specifications for Soil Gas Reduction Systems July 19, 2002
by Doug Kladder

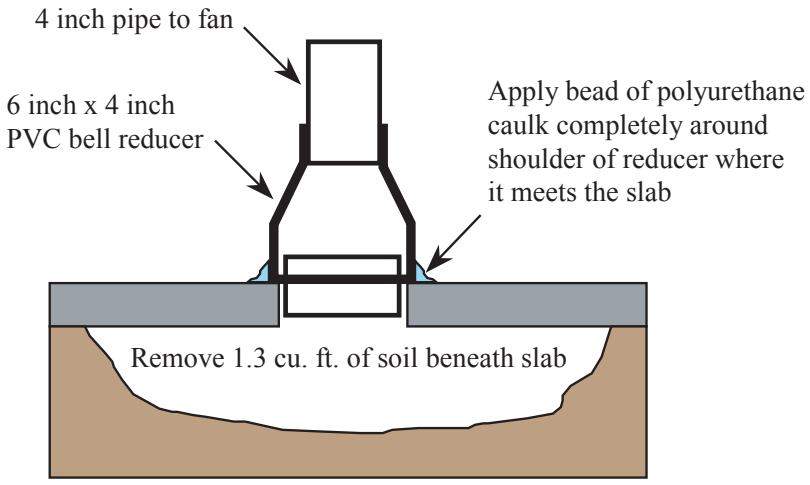
HILL AIR FORCE BASE

EXTERIOR-ROUTED ACTIVE SUB-SLAB DEPRESSURIZATION SYSTEM

FIGURE 3



Locate performance indicator inside home such as in garage or laundry room.
Make roof penetration in manner as to not void roof warranty.



Suction Point Detail

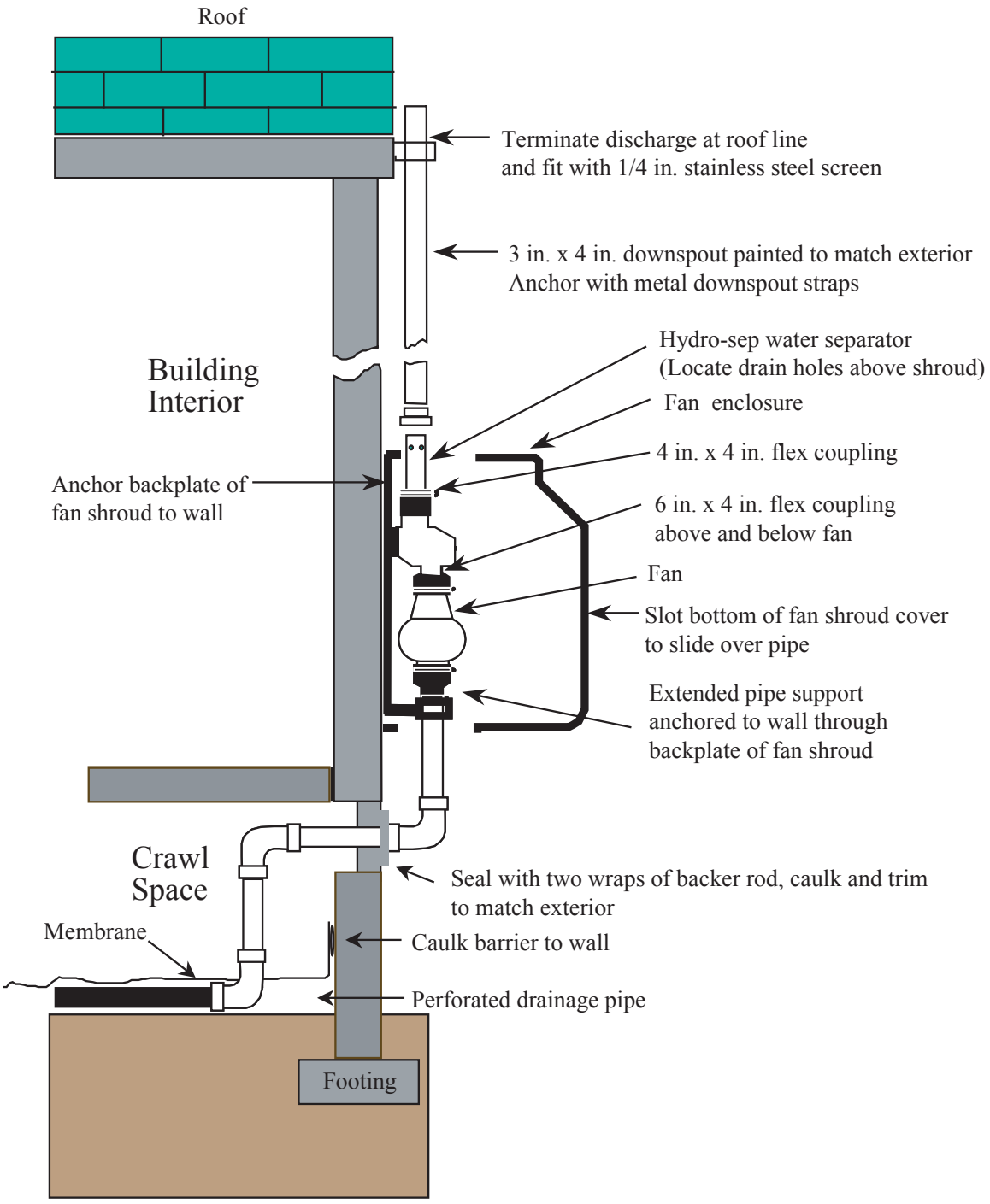
SOURCE:
Specifications for Soil Gas Reduction Systems
July 19, 2002 by Doug Kladder

HILL AIR FORCE BASE

INTERIOR-ROUTED COMBINATION ACTIVE SUB-SLAB AND SUB-MEMBRANE DEPRESSURIZATION SYSTEM

FIGURE 4

FILE *fig 4 int routed 802.ai 10/29/02*



FILE *fig 5 crawl space 802.ai 08/28/02*

SOURCE:
Specifications for Soil Gas Reduction Systems
July 19, 2002 by Doug Kladder

HILL AIR FORCE BASE

ACTIVE CRAWL SPACE SUB-MEMBRANE DEPRESSURIZATION SYSTEM

FIGURE 5

APPENDIX A

RESPONSE TO PUBLIC COMMENTS

APPENDIX B

APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS EVALUATION

TABLE B-1

IDENTIFICATION OF FEDERAL CHEMICAL-SPECIFIC ARARs
(Page 1 of 2)

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
Solid Waste Disposal Act	42 USC Sec. 6901-6987			
Identification and Listing of Hazardous Waste	40 CFR Part 261	Defines those solid wastes that are subject to regulation as hazardous wastes under 40 CFR Parts 262-265 and Parts 270, 271, 124 and Land Disposal Restrictions (LDRs) under 40 CFR 268.	Yes/---	No hazardous wastes generated by system installation or operation.
Safe Drinking Water Act	42 USC Sec. 300g			
National Primary Drinking Water Standards	40 CFR Part 141	Establishes health-based standards for public water systems (the Maximum Contaminant Level [MCL]). Meet MCLs in groundwater and surface water.	No/No	Indoor air quality mitigation systems are not intended to address groundwater quality.
National Secondary Drinking Water Standards	40 CFR Part 143	Establishes welfare-based standards for public water systems (secondary MCL).	No/No	Indoor air quality mitigation systems are not intended to address groundwater quality.

--- Applicable regulation is not considered under relevant appropriate criteria

TABLE B-1

IDENTIFICATION OF FEDERAL CHEMICAL-SPECIFIC ARARs
(Page 2 of 2)

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
Clean Water Act	33 USC Sec. 1251-1376			
Water Quality Standards	40 CFR Part 131	Sets criteria for developing water quality standards based on toxicity to aquatic organisms and human health.	No/No	Indoor air quality mitigation systems are not intended to address groundwater quality.
National Pretreatment Standards	40 CFR Part 403	Sets standards to control pollutants that pass through or interfere with treatment processes in publicly owned treatment works (POTW) or that may contaminate sewage sludge.	No/No	No discharge to POTW.
Clean Air Act	42 USC Sec. 7401-7642			
National Primary and Secondary Ambient Air Quality Standards	40 CFR Part 50	Establishes standards for ambient air quality to protect public health and welfare (including standards for particulate matter and lead).	No/Yes	None of the compounds addressed by the primary or secondary ambient air quality will be created/added to ambient air by the action.
National Emission Standards for Hazardous Air Pollutants	40 CFR Part 61 Subpart A	Sets emission standards for designated hazardous pollutants.	No/Yes	The proposed action will comply. Relevant and appropriate to all remedial activities that may result in air emissions. Emissions from the systems are *de minimus.*

TABLE B-2

IDENTIFICATION OF FEDERAL ACTION-SPECIFIC ARARs
(Page 1 of 3)

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
National Emission Standards for Hazardous Air Pollutants (NESHAPs)	40 CFR 61	Designates substances as hazardous air pollutants and establishes emission standards.	No/Yes	The proposed action will comply. Relevant and appropriate to all remedial activities that may result in air emissions. Emissions from the systems are *de minimus.*
Solid Waste Disposal Act	42 USC Sec. 6901-6987			
Identification and Listing of Hazardous Waste	40 CFR Part 261	Defines those solid wastes that are subject to regulation as hazardous wastes and applicability of land disposal restrictions.	Yes/---	The response action will comply. No hazardous wastes generated by system installation or operation.
Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities	40 CFR Part 264	Establishes minimum national standards that define the acceptable management of hazardous waste for owners and operators of facilities that treat, store, or dispose of hazardous waste.	---/---	See discussion of specific subparts.
• Preparedness and Prevention	Subpart C	Specifies requirements for communications, alarm systems and coordination with local authorities.	No/Yes	Residents are instructed in system indicators of satisfactory operation and asked to notify Hill Air Force Base in the event of a malfunction.

--- Applicable regulation is not considered under relevant appropriate criteria

TABLE B-2

IDENTIFICATION OF FEDERAL ACTION-SPECIFIC ARARs
(Page 2 of 3)

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
Solid Waste Disposal Act (continued) • Contingency Plan and Emergency Procedures	Subpart D	Requires development of a contingency plan and designation of an emergency coordinator.	No/No	Not applicable nor relevant and appropriate.
Manifest System, Record Keeping, and Reporting	Subpart E	264.71 Use of manifest system 264.72 Manifest discrepancies 264.73 Operating record	No/No	Not applicable nor relevant and appropriate.
• Releases from Solid Waste Management Units	Subpart F		No/No	Not applicable nor relevant and appropriate.
• Closure and Post-Closure	Subpart G		No/No	Not applicable nor relevant and appropriate.
• Use and Management of Containers	Subpart I	Requirements for storage of hazardous waste in containers.	No/No	Not applicable nor relevant and appropriate. No containers will be used during operation of the indoor air quality mitigation system**.**
• Tanks	Subpart J	Requirements for storage of hazardous waste in tanks.	No/No	No tanks are used in the operation of the proposed action.

TABLE B-2

IDENTIFICATION OF FEDERAL ACTION-SPECIFIC ARARs
(Page 3 of 3)

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
Land Disposal Restrictions	40 CFR Part 268	Identifies hazardous wastes that are restricted from land disposal.	Yes/---	The proposed action will comply. Applicable to storage and treatment of generated RCRA hazardous waste or soils containing RCRA-listed wastes disposed off-site. However, no such waste will be generated during implementation of or operation of the proposed action.
Clean Water Act	33 USC Sec. 1251-1376			
National Pretreatment	40 CFR Part 403	Sets standards to control pollutants that pass through or interfere with treatment processes in publicly owned treatment works (POTW) or that may contaminate sewage sludge.	No/No	Not applicable nor relevant and appropriate as there is no discharge to the POTW by the proposed action.

TABLE B-3

IDENTIFICATION OF FEDERAL LOCATION-SPECIFIC ARARs

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
Endangered Species Act	16 USC Sec. 1531-1543 50 CFR Part 402	Requires that Federal agencies insure that any action authorized, funded, or carried by the agency is not likely to jeopardize the continued existence of any threatened or endangered species or destroy or adversely modify critical habitat.	Yes/---	The proposed action will comply. The proposed action is in highly developed areas and therefore will not impact this ARAR.
National Historic Preservation Act	16 USC Sec. 470s 36 CFR 800	Section 106 of the National Historic Preservation Act requires Federal agencies to take into account the effects of their undertakings on historic properties.	Yes/---	The proposed action will comply. The response action will not impact any historic places.
Executive Order on Protection and Enhancement of the Cultural Environment	Exec. Order #11,593	Establishes consultation procedures and responsibilities of Federal agencies for historic preservation.	No/No	Substantive requirements can be met through compliance with 36 CFR Part 800.

--- Applicable regulation is not considered under relevant appropriate criteria

TABLE B-4

IDENTIFICATION OF STATE CHEMICAL-SPECIFIC ARARS
(Page 1 of 7)

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
Utah Public Drinking Water Regulations	UAC R309-200-5	Establishes maximum contaminant levels (MCLs) for inorganic and organic chemicals.	No/No	Indoor air quality mitigation systems are not intended to address groundwater quality.
Utah Public Drinking Water Regulations-Secondary Standards	UAC R309-200-6	Establishes welfare-based standards for public water systems (secondary MCLs).	No/No	Indoor air quality mitigation systems are not intended to address groundwater quality.

--- Applicable regulation is not considered under relevant appropriate criteria

TABLE B-4

IDENTIFICATION OF STATE CHEMICAL-SPECIFIC ARARS

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
Corrective Action Clean-up Standards Policy - UST and CERCLA Sites.	UAC R311-211	Lists general criteria to be considered in establishing clean-up standards including compliance with MCLs in Safe Drinking Water Act and Clean Air Act. Requires action to be taken to be protective. Requires source removal or control of source and prevention of further degradation. In the case of contamination above the MCL, if, after evaluation of all alternatives, it is determined that applicable minimum standards cannot reasonably be achieved, clean-up levels above these standards may be established on a case-by-case basis utilizing R311-211-3 and R311-211-4.	Yes/---	**Source Control (R311-211-2)** Indoor air quality mitigation systems are not intended to address groundwater quality. This ARAR requirement will be addressed in the Feasibility Study for OU 12. The air mitigation system controls the migration pathway of contaminants in groundwater that are accumulating in indoor air to mitigate the current risk posed by that pathway. **Prevent Further Degradation (R311-211-4)** Indoor air quality mitigation systems are not intended to address groundwater quality. **Cleanup Standards (R311-211-5)** Indoor air quality mitigation systems are not intended to address groundwater quality.
Criteria for the Identification and Listing of Hazardous Waste	UAC R315-2	Defines those solid wastes which are subject to regulation as hazardous wastes.	Yes/---	No listed or hazardous wastes are generated by the installation or operation of the indoor air quality mitigation system.

--- Applicable regulation is not considered under relevant appropriate criteria

TABLE B-4

IDENTIFICATION OF STATE CHEMICAL-SPECIFIC ARARS
(Page 3 of 7)

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
Ground-water protection standards for Treatment, Storgae, and Disposal Facilities (TSDFs)	UAC R315-8-6	Ground-water protection standards for owners and operators of hazardous waste TSDFs.	No/No	Indoor air quality mitigation systems are not intended to address groundwater quality.
Clean-up and Risk-Based Closure Standards-RCRA, UST, and CERCLA sites	UAC R315-101	R315-101 establishes requirements to support risk-based cleanup and closure standards at sites for which remediation or removal of hazardous constituents to background levels will not be achieved. The procedures in this rule also provide for continued management of sites for which minimal risk-based standards cannot be met. Requires removal or control of the source and non-degradation beyond existing contaminant levels.	Yes/Yes	Implementation and ongoing monitoring of indoor air quality mitigation systems provides continued management of the risk posed by this current exposure pathway. The requirement for Stabilization under R315-101-2 and Non-degradation under R315-101-3 associated with groundwater are not applicable nor relevant and appropriate to the removal action and are addressed by the final remedy for the operable unit.
Standards of Quality for Waters of the State	UAC R317-2	Standards for Quality for Waters of the State.	No/No	Indoor air quality mitigation systems are not intended to address groundwater quality that may discharge to waters of the state.
Ground-Water Quality Protection.	UAC R317-6	Ground-Water Quality Protection.	No/No	Indoor air quality mitigation systems are not intended to address groundwater quality.

--- Applicable regulation is not considered under relevant appropriate criteria

TABLE B-4

IDENTIFICATION OF STATE CHEMICAL-SPECIFIC ARARS
(Page 4 of 7)

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
Utah Air Conservation Regulations	UAC R307-107-1	R307-107 applies to all regulated pollutants including those for which there are National Ambient Air Quality Standards. Except as otherwise provided in R307-107, emissions resulting from an unavoidable breakdown will not be deemed a violation of these regulations. .	Yes/---	Applicable to the proposed action. The alternative will comply.
	UAC R307-205-3	Construction and Demolition Activities. Fugitive Dust Control.	Yes/---	The proposed action will comply. Indoor air quality mitigation systems do not require clearing or levelling of land greater than one-quarter acre in size, earthmoving, excavation, or movement of trucks or construction equipment over cleared land greater than one-quarter acre in size or access haul roads.
	UAC R307-210	The standards of performance for new stationary sources in 40 CFR 60 (1998), as amended by 63 FR 49442, 64 FR 7457, 64 FR 9257, and 64 FR 10105 are incorporated by reference.	Yes/---	The proposed action will comply. Applicable to remediation systems that may discharge contaminants to air. However the indoor air quality mitigation system includes no treatment technology due to the *de minimus* nature of emissions.

--- Applicable regulation is not considered under relevant appropriate criteria

TABLE B-4

IDENTIFICATION OF STATE CHEMICAL-SPECIFIC ARARS
(Page 5 of 7)

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
National Emission Standards for Hazardous Air Pollutants (NESHAP)	UAC R307-214	NESHAP are incorporated by reference (see 40 CFR 61 Subpart A).	No/Yes	The proposed action will comply. NESHAP standards are relevant and appropriate to response actions that release contaminants to air. Emissions from the systems are *de minimus*
Salt Lake and Utah Counties, Ogden City and Any Nonattainment Area for PM10	UAC R307-309-4	Fugitive Emissions and Fugitive Dust.	Yes/---	The proposed action will comply. Requires the submission of a plan that shall address fugitive dust control strategies. Substantive requirements only are applicable. However, no dust will be generated by the construction or operation of the indoor air quality mitigation system; therefore no plan is necessary.

--- Applicable regulation is not considered under relevant appropriate criteria

TABLE B-4

IDENTIFICATION OF STATE CHEMICAL-SPECIFIC ARARS
(Page 6 of 7)

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
Davis and Salt Lake Counties and Ozone Nonattainment Areas: Ozone Provisions	UAC R307-325-1	No person may permit or cause volatile organic compounds (VOCs) to be spilled, discarded, stored in open containers, or handled in any other manner, which would result in evaporation in excess of that which would result from the application of reasonably available control technology (RACT) (as defined in 40 CFR 51.100(o)).	Yes/---	Requires use of reasonably available control technology. Implementation of the indoor air quality mitigation system is application of reasonable control technology as it controls the risk associated with VOC emission accumulations in indoor air.
	UAC R307-410-4	Documentation of Ambient Air Impacts for Hazardous Air Pollutants.	Yes/---	The proposed action will comply. Defines limits for *De minimus* exemption status under R307-413-8. Applicable to remedial alternatives that may discharge contaminants to air. The indoor air quality mitigation systems will comply with the *De minimus exemption.*

--- Applicable regulation is not considered under relevant appropriate criteria

TABLE B-4

IDENTIFICATION OF STATE CHEMICAL-SPECIFIC ARARS
(Page 7 of 7)

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
Permits: Exemptions and Special Provisions	UAC R307-413-8	*De minimus* emissions from Air Strippers and Soil Venting Projects. Approval is not required under R307-401 if total emissions of VOCs are less than the 5 tons per year limit defined in R307-413-2(1)(c) and hazardous air pollutants are below the levels listed in R307-410-4(1)(d).	---/Yes	The proposed action will comply. Approval is not required under R307-401 because total emissions of VOCs are less than the 5 tons per year limit defined in R307-413-2(1)(c) and hazardous air pollutants are below the levels listed in R307-410-4(1)(d).

--- Applicable regulation is not considered under relevant appropriate criteria

TABLE B-5

IDENTIFICATION OF STATE ACTION-SPECIFIC ARARs

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
Corrective Action Clean-up Standards Policy - UST and CERCLA Sites.	UAC R311-211	Lists general criteria to be considered in establishing clean-up standards including compliance with Maximum Contaminant Levels (MCLs) in Safe Drinking Water Act and Clean Air Act. Requires action to be taken to be protective. Requires source removal or control of source and prevention of further degradation. In the case of contamination above the MCL, if, after evaluation of all alternatives, it is determined that applicable minimum standards cannot reasonably be achieved, clean-up levels above these standards may be established on a case-by-case basis utilizing R311-211-3 and R311-211- 4.	Yes/---	**Source Control (R311-211-2)** Indoor air quality mitigation systems are not intended to address groundwater quality. The air mitigation system controls the migration pathway of contaminants in groundwater that are accumulating in indoor air to mitigate the current risk posed by that pathway. **Prevent Further Degradation (R311-211-4)** Indoor air quality mitigation systems are not intended to address groundwater quality. **Cleanup Standards (R311-211-5)** Indoor air quality mitigation systems are not intended to address groundwater quality.
General Requirements - Identification and Listing of Hazardous Waste	UAC R315-2	Defines those solid wastes which are subject to regulation as hazardous wastes.	Yes/---	The installation or operation of the indoor air quality mitigation system generates no listed or hazardous wastes.
Hazardous Waste Generator Requirements	UAC R315-5	Establishes standards for generators of hazardous waste.	Yes/---	The installation or operation of the indoor air quality mitigation system generates no listed or hazardous wastes. State counterpart of 40 CFR 262.

--- Applicable regulation is not considered under relevant appropriate criteria

TABLE B-5

IDENTIFICATION OF STATE ACTION-SPECIFIC ARARs
(Page 2 of 7)

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDFs)	UAC R315-8	Establishes minimum standards which define the acceptable management of hazardous waste for owners and operators of TSDFs.	---/---	See discussion for specific subparts below.
General Facility Standards	UAC R315-8-2	Describes security, inspection and personnel training.	No/Yes	Indoor air quality mitigation systems are placed in affected residences and therefore secure. Residents are instructed in system indicators of satisfactory operation and asked to notify Hill AFB in the event of a malfunction. Operation personnel are trained in system design, operation and maintenance.
Location standards	UAC R315-8-2.9	Describes facility siting requirements.	No/No	Indoor air quality mitigation systems must be placed in affected residences.
Preparedness and Prevention	UAC R315-8-3	Describes communications, alarm systems and coordination with local authorities.	No/Yes	Residents are instructed in system indicators of satisfactory operation and asked to notify Hill AFB in the event of a malfunction.
Contingency Plan and Emergency Procedures	UAC R315-8-4	Requires development of a contingency plan and designation of an emergency coordinator.	No/No	Not applicable nor relevant and appropriate.
Manifest System, Record-Keeping, and Reporting	UAC R315-8-5	Requires manifesting, record keeping and regular reporting.	No/No	Not applicable nor relevant and appropriate.
Groundwater Protection	UAC R315-8-6	Describes groundwater monitoring requirements for TSDFs.	No/No	Indoor air quality mitigation systems are not intended to address groundwater quality.

--- Applicable regulation is not considered under relevant appropriate criteria

TABLE B-5

IDENTIFICATION OF STATE ACTION-SPECIFIC ARARs
(Page 3 of 7)

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
Closure and Post-Closure	UAC R315-8-7	Establishes closure and post-closure performance standards and plan requirements for TSDFs.	No/No	Not applicable nor relevant and appropriate.
Use and Management of Containers	UAC R315-8-9	Requires specific procedures for the temporary storage of hazardous wastes in containers.	No/No	No containers will be used during operation of the indoor air quality mitigation system**.**
Tanks	UAC R315-8-10	Requires specific procedures for the use of tanks for the treatment or temporary storage of hazardous wastes in tanks.	No/No	No tanks will be used during operation of the indoor air quality mitigation system**.**
Corrective Action for Solid Waste Management Units	UAC R315-8-21	Establishes requirements for designation of a CAMU and defines management practices.	No/No	The proposed action does not include use of a CAMU. State counterpart of 40 CFR 264 Subpart S.
Land Disposal Restrictions	UAC R315-13	Identifies hazardous wastes that are restricted from land disposal.	Yes/---	The proposed action will comply. Applicable to storage and treatment of generated RCRA hazardous waste or soils containing RCRA-listed wastes disposed off-site. However, no such waste will be generated during implementation of the response action and construction or operation of the indoor air quality mitigation system. State counterpart of 40 CFR 268.

--- Applicable regulation is not considered under relevant appropriate criteria

TABLE B-5

IDENTIFICATION OF STATE ACTION-SPECIFIC ARARs

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
Clean-up and Risk-Based Closure Standards	UAC R315-101	R315-101 establishes information requirements to support risk-based cleanup and closure standards at sites for which remediation or removal of hazardous constituents to background levels will not be achieved. Requires continued management of sites for which minimal risk-based standards cannot be met. Requires removal or control of the source and non-degradation beyond existing contamination levels. Requires reporting to verify compliance.	Yes/Yes	Implementation and ongoing monitoring of indoor air quality mitigation systems provides continued management of the risk posed by this current exposure pathway. The requirement for Stabilization under R315-101-2 and Non-degradation under R315-101-3 are addressed in the final remedy for the operable unit.
Construction and performance requirements for POTWs	UAC R317-3	Sewers and wastewater treatment works.	No/No	Not applicable nor relevant and appropriate as there is no discharge to the POTW by the response action.
Ground-Water Quality Protection	UAC R317-6	Ground-Water Quality Protection.	No/No	Indoor air quality mitigation systems are not intended to address groundwater quality.
Utah Pollution Discharge Elimination System (UPDES)	UAC R317-8-7	Criteria and standards for the imposition of technology-based treatment requirements and represents the minimum level of control that must be imposed in a UPDES permit.	No/No	Indoor air quality mitigation systems are not intended to address groundwater quality.

--- Applicable regulation is not considered under relevant appropriate criteria

TABLE B-5

IDENTIFICATION OF STATE ACTION-SPECIFIC ARARs
(Page 5 of 7)

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
Pretreatment	UAC R317-8-8	Sets standards for discharge to a POTW.	No/No	Not applicable nor relevant and appropriate as there is no discharge to the POTW by the response action.
Air Quality	UAC R307-101-2	Defines prohibited levels of air pollution	Yes/---	The proposed action will comply.
	UAC R307-102-1	Emission of air contaminants in sufficient quantities to cause air pollution as defined in R307-101-2 is prohibited.	Yes/---	The proposed action will comply.
	UAC R307-107	Except as otherwise provided in R307-107, emissions resulting from an unavoidable breakdown will not be deemed a violation of these regulations.	---/Yes	The proposed action will comply.
	UAC R307-165-1	Emission testing will be required of all sources with established emission limitations at least once every five years.	Yes/---	Emissions from the proposed action are *de minimus*. The need for compliance with this requirement will be addressed in 5-year reviews for operable units with existing Records of Decision (RODs) or feasibility studies for other operable units.
Construction and Demolition Activities.	UAC R307-205-3	Construction and Demolition Activities. Fugitive Dust Control.	Yes---	The proposed action will comply. Activity associated with the installation of the response action will not result in fugitive dust emissions.

--- Applicable regulation is not considered under relevant appropriate criteria

TABLE B-5

IDENTIFICATION OF STATE ACTION-SPECIFIC ARARs
(Page 6 of 7)

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
Standards for Stationary Air Sources	UAC R307-210	The standards of performance for new stationary sources in 40 CFR 60 (1998), as amended by 63 FR 49442, 64 FR 7457, 64 FR 9257, and 64 FR 10105 are incorporated by reference.	Yes/---	The proposed action will comply. However the indoor air quality mitigation system includes no treatment technology due to the de minimus nature of emissions.
National Emission Standards for Hazardous Air Pollutants (NESHAP)	UAC R307-214	National Emission Standards for Hazardous Air Pollutants (NESHAP) are incorporated by reference.	---/Yes	The proposed action will comply. NESHAP standards are relevant and appropriate to response actions that release contaminants to air. Emissions from the systems are *de minimus.*
Salt Lake and Utah Counties, Ogden City and Any Nonattainment Area for PM10	UAC R307-309-4	Fugitive Emissions and Fugitive Dust.	Yes/---	The proposed action will comply. Requires the submission of a plan that shall address fugitive dust control strategies. Substantive requirements only are applicable. However, no dust will be generated by the construction or operation of the indoor air quality mitigation system therefore no plan is necessary.
Davis and Salt Lake Counties and Ozone Nonattainment Areas: Ozone Provisions.	UAC R307-325-1	No person may permit or cause volatile organic compounds (VOCs) to be spilled, discarded, stored in open containers, or handled in any other manner, which would result in evaporation in excess of that which would result from the application of reasonably available control technology (RACT) (as defined in 40 CFR 51.100(o)).	Yes/---	Requires use of reasonably available control technology. Implementation of the indoor air quality mitigation system is application of reasonable control technology as it controls the risk associated with VOC emission accumulations in indoor air.

--- Applicable regulation is not considered under relevant appropriate criteria

TABLE B-5

IDENTIFICATION OF STATE ACTION-SPECIFIC ARARs

Standard, Requirement, Criteria, or Limitation	Citation	Description	Applicable/ Relevant and Appropriate	Compliance Comment
Prevention of Significant Deterioration (PSD) of Air Quality.	UAC R307-405-6(1)	Provides exemptions from R307-405-6 (2) if the new source is not defined as a major source.	No/No	The proposed action will not be a major source and will be covered by the requirements of R307-413-8.
	UAC R307-410-4	Documentation of Ambient Air Impacts for Hazardous Air Pollutants.	Yes/---	The proposed action will comply. Defines limits for *De minimus* exemption status under R307-413-8. Applicable to remedial alternatives that may discharge contaminants to air. The indoor air quality mitigation systems will comply with the *de minimus* exemption.
Permits: Exemptions and Special Provisions	UAC R307-413-8	*De minimus* emissions from Air Strippers and Soil Venting Projects. Approval is not required under R307-401 if total emissions of VOCs are less than the 5 tons per year limit defined in R307-413-2(1)(c) and hazardous air pollutants are below the levels listed in R307-410-4(1)(d).	---/Yes	The proposed action will comply. Approval is not required under R307-401 because total emissions of VOCs are less than the 5 tons per year limit defined in R307-413-2(1)(c) and hazardous air pollutants are below the levels listed in R307-410-4(1)(d).

--- Applicable regulation is not considered under relevant appropriate criteria